

Package ‘packrat’

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Type Package

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Description Manage the R packages your project depends on in an isolated, portable, and reproducible way.

License GPL-2

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Imports tools, utils

Suggests testthat (>= 0.7), devtools, httr, knitr, rmarkdown

Enhances BiocInstaller

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bundle	<i>Bundle a Packrat Project</i>
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Description

Bundle a packrat project, for easy sharing.

Usage

```
bundle(project = NULL, file = NULL, include.src = TRUE,
        include.lib = FALSE, include.bundles = TRUE,
        include.vcs.history = FALSE, overwrite = FALSE, omit.cran.src = FALSE,
        ...)
```

Arguments

project	The project directory. Defaults to the currently activate project. By default, the current project active under packratMode is checked.
file	The path to write the bundle. By default, we write the bundle to packrat/bundles/<project>-<date>.tar with <date> as returned by Sys.date().
include.src	Include the packrat sources?
include.lib	Include the packrat private library?
include.bundles	Include other packrat bundle tarballs (as in packrat/bundles/)?
include.vcs.history	Include version control history (ie, .git/ or .svn/ folders)?
overwrite	Boolean; overwrite the file at file if it already exists?
omit.cran.src	Boolean; when TRUE, packages whose sources can be retrieved from CRAN are excluded from the bundle.
...	Optional arguments passed to tar .

Details

The project is bundled as a gzipped tarball (.tar.gz), which can be unbundled either with `packrat::unbundle` (which restores the project as well), R's own `utils::untar`, or through most system tar implementations.

Value

The path (invisibly) to the bundled project.

clean	<i>Remove Packages from the Library</i>
-------	---

Description

Remove packages from the given library.

Usage

```
clean/packages = NULL, project = NULL, lib.loc = libDir(project),
dry.run = FALSE, force = FALSE)
```

Arguments

packages	A set of package names to remove from the project. When NULL, <code>unused_packages</code> is used to find packages unused in the project.
project	The project directory. Defaults to current working directory.
lib.loc	The library to clean. Defaults to the private package library associated with the project directory.
dry.run	Perform a dry run, returning records on which packages would have been moved by the current clean action.
force	Force package removal, even if they are still in use within the project?

Examples

```
## Not run:

# Get unused package records
unused_packages()

# Clean all unused packages
clean()

# Clean specific packages
clean("foo")

## End(Not run)
```

disable *Disable the use of Packrat in a Project*

Description

Disable packrat within a project, reverting to the use of standard user package libraries.

Usage

```
disable(project = NULL, restart = TRUE)
```

Arguments

project	The directory in which packrat will be disabled (defaults to the current working directory)
restart	If TRUE, restart the R session after disabling packrat.

Note

Disabling packrat for a project removes the packrat initialization code from the .Rprofile file, resulting in the use of standard user package libraries. Note that the packrat directory is not deleted, but remains unused.

To re-enable the use of packrat for a project you can call the [init](#) function.

The restart parameter will only result in a restart of R when the R environment packrat is running within makes available a restart function via `getOption("restart")`.

init *Initialize Packrat on a new or existing R project*

Description

Given a project directory, makes a new packrat project in the directory.

Usage

```
init(project = ".", options = NULL, enter = TRUE, restart = enter)
```

Arguments

project	The directory that contains the R project.
options	An R list of options, as specified in packrat-options .
enter	Boolean, enter packrat mode for this project after finishing a init?
restart	If TRUE, restart the R session after init.

Details

`init` works as follows:

1. Application dependencies are computed by examining the R code throughout the project for `library` and `require` calls.
2. A snapshot is taken of the version of each package currently used by the project as described in [snapshot](#), and each package's sources are downloaded.
3. A private library is created in the directory.
4. The snapshot is applied to the directory as described in [restore](#).

When `init` is finished, all the packages on which the project depends are installed in a new, private library located inside the project directory.

You must restart your R session in the given project directory after running `init` in order for the changes to take effect!

When R is started in the directory, it will use the new, private library. Calls to [require](#) and [library](#) will load packages from the private library (except for 'base' or 'recommended' R packages, which are found in the system library), and functions such as [install.packages](#) will modify that private library. You can sync this private library with packrat using [snapshot](#) and [restore](#).

Note

The `restart` parameter will only result in a restart of R when the R environment packrat is running within makes available a restart function via `getOption("restart")`.

See Also

[packrat](#) for a description of the files created by `init`.

Examples

```
## Not run:  
  
## initialize a project using a local repository of packages  
packrat::init(options = list(local.repos = "~/projects/R"))  
  
## End(Not run)
```

`install`

Install a local development package.

Description

Uses R CMD INSTALL to install the package. Will also try to install dependencies of the package from CRAN, if they're not already installed.

Usage

```
install(pkg = ".", reload = TRUE, quick = FALSE, local = TRUE,
  args = getOption("devtools.install.args"), quiet = FALSE,
  dependencies = NA, build_vignettes = !quick,
  keep_source = getOption("keep.source.pkgs"))
```

Arguments

pkg	package description, can be path or package name.
reload	if TRUE (the default), will automatically reload the package after installing.
quick	if TRUE skips docs, multiple-architectures, demos, and vignettes, to make installation as fast as possible.
local	if FALSE builds the package first: this ensures that the installation is completely clean, and prevents any binary artefacts (like <code>‘.o’, .so</code>) from appearing in your local package directory, but is considerably slower, because every compile has to start from scratch.
args	An optional character vector of additional command line arguments to be passed to R CMD <code>install</code> . This defaults to the value of the option <code>"devtools.install.args"</code> .
quiet	if TRUE suppresses output from this function.
dependencies	logical indicating to also install uninstalled packages which this pkg depends on/links to/suggests. See argument dependencies of install.packages .
build_vignettes	if TRUE, will build vignettes. Normally it is <code>build</code> that’s responsible for creating vignettes; this argument makes sure vignettes are built even if a build never happens (i.e. because <code>local = TRUE</code>).
keep_source	If TRUE will keep the <code>src</code> refs from an installed package. This is useful for debugging (especially inside of RStudio). It defaults to the option <code>"keep.source.pkgs"</code> .

Details

By default, installation takes place using the current package directory. If you have compiled code, this means that artefacts of compilation will be created in the `src/` directory. If you want to avoid this, you can use `local = FALSE` to first build a package bundle and then install it from a temporary directory. This is slower, but keeps the source directory pristine.

If the package is loaded, it will be reloaded after installation.

install_local

Install a Package from a Local Repository

Description

This function can be used to install a package from a local ‘repository’; i.e., a directory containing package tarballs and sources.

Usage

```
install_local(pkgs, ..., lib = .libPaths()[1],
              repos = get_opts("local.repos"))
```

Arguments

pkgs	A character vector of package names.
...	Optional arguments passed to install .
lib	The library in which the package should be installed.
repos	The local repositories to search for the package names specified.

migrate	<i>Migrate to Packrat Mode</i>
---------	--------------------------------

Description

Migrate a project using the older version of packrat + packrat structure to the newer version.

Usage

```
migrate(project = ".", ask = TRUE)
```

Arguments

project	The project directory.
ask	Boolean, ask before removing the <code>.Renvi ron</code> file?

Details

This function will:

1. Move the library folder to the packrat/lib folder,
2. Move the packrat.sources folder to the packrat/src folder,
3. Move the packrat.lock file to packrat/packrat.lock,
4. Remove the .Renvi ron file as it is no longer needed,
5. Update the package .Rprofile.

packify

Automatically Enter Packrat Mode on Startup

Description

Install/augment the `.Rprofile` in a project, so that all R sessions started in this directory enter packrat mode, and use the local project library.

Usage

```
packify(project = NULL, quiet = FALSE)
```

Arguments

project	The directory in which to install the <code>.Rprofile</code> file.
quiet	Be chatty?

Details

It is not normally necessary to call `packify` directly; these files are normally installed by `init`. `packify` can be used to restore the files if they are missing (for instance, if they were not added to source control, or were accidentally removed).

You'll need to restart R in the specified directory after running `packify` in order to start using the private package library.

packrat

Packrat: Reproducible dependency management

Description

Packrat is a tool for managing the R packages your project depends on in an isolated, portable, and reproducible way.

Details

Use packrat to make your R projects more:

- **Isolated:** Installing a new or updated package for one project won't break your other projects, and vice versa. That's because packrat gives each project its own private package library.
- **Portable:** Easily transport your projects from one computer to another, even across different platforms. Packrat makes it easy to install the packages your project depends on.
- **Reproducible:** Packrat records the exact package versions you depend on, and ensures those exact versions are the ones that get installed wherever you go.

Use `init` to create a new packrat project, `snapshot` to record changes to your project's library, and `restore` to recreate your library the way it was the last time you (or anyone!) took a snapshot.

Using these simple functions and sharing packrat's files lets you collaborate in a shared, consistent environment with others as your project grows and changes, and provides an easy way to share your results when you're done.

Anatomy of a packrat project

A packrat project contains a few extra files and directories. The `init` function creates these files for you, if they don't already exist.

`packrat/lib/` Private package library for this project.

`packrat/src/` Source packages of all the dependencies that packrat has been made aware of.

`packrat/packrat.lock` Lists the precise package versions that were used to satisfy dependencies, including dependencies of dependencies. (This file should never be edited by hand!)

`.Rprofile` Directs R to use the private package library (when it is started from the project directory).

Using packrat with version control

Packrat is designed to work hand in hand with Git, Subversion, or any other version control system. Be sure to check in the `.Rprofile`, `packrat.lock` files, and everything under `packrat/src/`. You can tell your VCS to ignore `packrat/lib/` (or feel free to check it in if you don't mind taking up some extra space in your repository).

Author(s)

RStudio, Inc.

Examples

```
## Not run:
# Create a new packrat project from an existing directory of \R code
init()

# Install a package and take a snapshot of the new state of the library
install.packages("TTR")
snapshot()

# Accidentally remove a package and restore to add it back
remove.packages("TTR")
restore()

## End(Not run)
```

packrat-external *Managing External Libraries*

Description

These functions provide a mechanism for (temporarily) using packages outside of the packrat private library. The packages are searched within the 'default' libraries; that is, the libraries that would be available upon launching a new R session.

Usage

```
with_extlib(packages, expr, envir = parent.frame())  
extlib(packages)  
user_lib()  
packrat_lib()
```

Arguments

packages	A set of package names (as a character vector) to load for the duration of evaluation of expr.
expr	An R expression.
envir	An environment in which the expression is evaluated.

Examples

```
## Not run:  
with_extlib("lattice", xyplot(1 ~ 1))  
  
## End(Not run)
```

packrat-mode *Packrat Mode*

Description

Use these functions to switch packrat mode on and off. When within packrat mode, the R session will use the private library generated for the current project.

Usage

```
packrat_mode(on = NULL, project = NULL,
             auto.snapshot = get_opts("auto.snapshot"), clean.search.path = TRUE)

on(project = NULL, auto.snapshot = get_opts("auto.snapshot"),
   clean.search.path = TRUE, print.banner = TRUE)

off(project = NULL, print.banner = TRUE)
```

Arguments

on	Turn packrat mode on (TRUE) or off (FALSE). If omitted, packrat mode will be toggled.
project	The directory in which packrat mode is launched – this is where local libraries will be used and updated.
auto.snapshot	Perform automatic, asynchronous snapshots?
clean.search.path	Detach and unload any packages loaded from non-system libraries before entering packrat mode?
print.banner	Print the packrat banner when entering / exiting packrat mode? The packrat banner informs you of the new packrat mode state, as well as the library path in use.

packrat-options	<i>Get/set packrat project options</i>
-----------------	--

Description

Get and set options for the current packrat-managed project.

Usage

```
get_opts(options = NULL, simplify = TRUE, project = NULL)

set_opts(..., project = NULL, persist = TRUE)

opts
```

Arguments

options	A character vector of valid option names.
simplify	Boolean; unlist the returned options? Useful for when retrieving a single option.
project	The project directory. When in packrat mode, defaults to the current project; otherwise, defaults to the current working directory.
...	Entries of the form key = value, used for setting packrat project options.
persist	Boolean; persist these options for future sessions?

Valid Options

- `auto.snapshot`: Perform automatic, asynchronous snapshots when running interactively? (logical; defaults to TRUE)
- `use.cache`: Install packages into a global cache, which is then shared across projects? The directory to use is read through `Sys.getenv("R_PACKRAT_CACHE_DIR")`. Not yet implemented for Windows. (logical; defaults to FALSE)
- `print.banner.on.startup`: Print the banner on startup? Can be one of TRUE (always print), FALSE (never print), and 'auto' (do the right thing) (defaults to "auto")
- `vcs.ignore.lib`: Add the packrat private library to your version control system ignore? (logical; defaults to TRUE)
- `vcs.ignore.src`: Add the packrat private sources to your version control system ignore? (logical; defaults to FALSE)
- `external.packages`: Packages which should be loaded from the user library. This can be useful for very large packages which you don't want duplicated across multiple projects, e.g. BioConductor annotation packages, or for package development scenarios wherein you want to use e.g. devtools and roxygen2 for package development, but do not want your package to depend on these packages. (character; defaults to `Sys.getenv("R_PACKRAT_EXTERNAL_PACKAGES")`)
- `local.repos`: Ad-hoc local 'repositories'; i.e., directories containing package sources within sub-directories. (character; empty by default)
- `load.external.packages.on.startup`: Load any packages specified within `external.packages` on startup? (logical; defaults to TRUE)
- `ignored.packages`: Prevent packrat from tracking certain packages. Dependencies of these packages will also not be tracked (unless these packages are encountered as dependencies in a separate context from the ignored package). (character; empty by default)
- `quiet.package.installation`: Emit output during package installation? (logical; defaults to TRUE)
- `snapshot.recommended.packages`: Should 'recommended' packages discovered in the system library be snapshotted? See the Priority field of `available.packages()` for more information – 'recommended' packages are those normally bundled with CRAN releases of R on OS X and Windows, but new releases are also available on the CRAN server. (logical; defaults to FALSE)
- `snapshot.fields`: What fields of a package's DESCRIPTION file should be used when discovering dependencies? (character, defaults to `c("Imports", "Depends", "LinkingTo")`)

Examples

```
## Not run:
## use 'devtools' and 'knitr' from the user library
packrat::set_opts(external.packages = c("devtools", "knitr"))

## set local repository
packrat::set_opts(local.repos = c("~/projects/R"))

## get the set of 'external packages'
packrat::opts$external.packages()
```

```
## set the external packages
packrat::opts$external.packages(c("devtools", "knitr"))

## End(Not run)
```

repository-management *Add a Repository*

Description

Add a repository to the set of currently available repositories. This is effectively an easier-to-use wrapper over interacting with the "repos" option, which is otherwise set with `options(repos = ...)`.

Usage

```
repos_add(..., overwrite = FALSE)
repos_add_local(..., overwrite = FALSE)
repos_set(...)
repos_set_local(...)
repos_remove(names)
repos_list()
```

Arguments

...	Named arguments of the form <code><repoName> = <pathToRepo></code> .
overwrite	Boolean; overwrite if a repository with the given name already exists?
names	The names of repositories (as exist in e.g. <code>names(getOption("repos"))</code>).

Details

`repos_add_local` is used for adding file-based repositories; that is, CRAN repositories that live locally on disk and not on the internet / local network.

repos_create	<i>Create a Local, CRAN-like Repository</i>
--------------	---

Description

Generate a local CRAN-like repository which can be used to store and distribute R packages.

Usage

```
repos_create(path, name = basename(path), add = TRUE)
```

Arguments

path	Path to a local CRAN-like repository.
name	The name to assign to the repository. Defaults to the directory name in which the repository is created.
add	Add this new repository to the current set of repositories?

repos_upload	<i>Upload a Package to a Local CRAN-like Repository</i>
--------------	---

Description

Upload a Package to a Local CRAN-like Repository

Usage

```
repos_upload(package, to, ...)
```

Arguments

package	Path to a package tarball. The tarball should be created by R CMD build; alternatively, it can be the path to a folder containing the source code for a package (which will then be built with R CMD build) and then uploaded to the local repository.
to	The name of the CRAN-like repository. It (currently) must be a local (on-disk) CRAN repository.
...	Optional arguments passed to R CMD build.

restore	<i>Apply the most recent snapshot to the library</i>
---------	--

Description

Applies the most recent snapshot to the project's private library.

Usage

```
restore(project = NULL, overwrite.dirty = FALSE, prompt = interactive(),
        dry.run = FALSE, restart = !dry.run)
```

Arguments

project	The project directory. When in packrat mode, if this is NULL, then the directory associated with the current packrat project is used. Otherwise, the project directory specified is used.
overwrite.dirty	A dirty package is one that has been changed since the last snapshot or restore. Packrat will leave these alone by default. If you want to guarantee that restore will put you in the exact state represented by the snapshot being applied, use <code>overwrite.dirty = TRUE</code> .
prompt	TRUE to prompt before performing potentially destructive changes (package removals or downgrades); FALSE to perform these operations without confirmation.
dry.run	If TRUE, compute the changes to your packrat state that would be made if a restore was performed, without actually executing them.
restart	If TRUE, restart the R session after restoring.

Details

restore works by adding, removing, and changing packages so that the set of installed packages and their versions matches the snapshot exactly.

There are three common use cases for restore:

- **Hydrate:** Use restore after copying a project to a new machine to populate the library on that machine.
- **Sync:** Use restore to apply library changes made by a collaborator to your own library. (In general, you want to run restore whenever you pick up a change to `packrat.lock`)
- **Rollback:** Use restore to undo accidental changes made to the library since the last snapshot.

restore cannot make changes to packages that are currently loaded. If changes are necessary to currently loaded packages, you will need to restart R to apply the changes (restore will let you know when this is necessary). It is recommended that you do this as soon as possible, because any library changes made between running restore and restarting R will be lost.

Note

restore can be destructive; it will remove packages that were not in the snapshot, and it will replace newer packages with older versions if that's what the snapshot indicates. restore will warn you before attempting to remove or downgrade a package (if prompt is TRUE), but will always perform upgrades and new installations without prompting.

restore works only on the private package library created by packrat; if you have other libraries on your path, they will be unaffected.

The restart parameter will only result in a restart of R when the R environment packrat is running within makes available a restart function via `getOption("restart")`.

See Also

[snapshot](#), the command that creates the snapshots applied with restore.

[status](#) to view the differences between the most recent snapshot and the library.

search_path	<i>Get Packages on the Search Path</i>
-------------	--

Description

Retrieve the packages on the search path, as well as the associated library location.

Usage

```
search_path()
```

snapshot	<i>Capture and store the packages and versions in use</i>
----------	---

Description

Finds the packages in use in the project, and stores a list of those packages, their sources, and their current versions in packrat.

Usage

```
snapshot(project = NULL, available = NULL, lib.loc = libDir(project),
  ignore.stale = FALSE, dry.run = FALSE, prompt = interactive())
```


Arguments

project	The project directory. Defaults to current working directory.
available	A database of available packages.
lib.loc	The library to snapshot. Defaults to the private library associated with the given directory.
ignore.stale	Stale packages are packages that are different from the last snapshot, but were installed by packrat. Typically, packages become stale when a new snapshot is available, but you haven't applied it yet with restore . By default, packrat will prevent you from taking a snapshot when you have stale packages to prevent you from losing changes from the unapplied snapshot. If your intent is to overwrite the last snapshot without applying it, use <code>ignore.stale = TRUE</code> to skip this check.
dry.run	Computes the changes to your packrat state that would be made if a snapshot were performed, and prints them to the console.
prompt	TRUE to prompt before performing snapshotting package changes that might be unintended; FALSE to perform these operations without confirmation. Potentially unintended changes include snapshotting packages at an older version than the last snapshot, or missing despite being present in the last snapshot.

Note

snapshot modifies the project's `packrat.lock` file, and the sources stored in the project's `packrat/src` directory. If you are working with a version control system, your collaborators can sync the changes to these files and then use [restore](#) to apply your snapshot.

See Also

[restore](#) to apply a snapshot. [status](#) to view the differences between the most recent snapshot and the library.

Examples

```
## Not run:
# Take a snapshot of the current project
snapshot()

# See what changes would be included in a snapshot
snapshot(dry.run = TRUE)

## End(Not run)
```

 status

Show differences between the last snapshot and the library

Description

Shows the differences between the project's packrat dependencies, its private package library, and its R scripts.

Usage

```
status(project = NULL, lib.loc = libDir(project), quiet = FALSE)
```

Arguments

project	The directory that contains the R project.
lib.loc	The library to examine. Defaults to the private library associated with the project directory.
quiet	Print detailed information about the packrat status to the console?

Details

These differences are created when you use the normal R package management commands like [install.packages](#), [update.packages](#), and [remove.packages](#). To bring these differences into packrat, you can use [snapshot](#).

Differences can also arise if one of your collaborators adds or removes packages from the packrat dependencies. In this case, you simply need to tell packrat to update your private package library using [restore](#).

Value

Either NULL if a packrat project has not yet been initialized, or a (invisibly) a `data.frame` with components:

package	The package name,
packrat.version	The package version used in the last snapshot,
packrat.source	The location from which the package was obtained,
library.version	The package version available in the local library,
currently.used	Whether the package is used in any of the R code in the current project.

unbundle *Unbundle a Packrat Project*

Description

Unbundle a previously [bundled](#) project.

Usage

```
unbundle(bundle, where, ..., restore = TRUE)
```

Arguments

bundle	Path to the bundled file.
where	The directory where we will unbundle the project.
...	Optional arguments passed to tar .
restore	Boolean; should we restore the library after unbundle-ing the project?

unused_packages *Find Unused Packages in a Project*

Description

Unused packages are those still contained within your project library, but are unused in your project.

Usage

```
unused_packages(project = NULL, lib.loc = libDir(project))
```

Arguments

project	The project directory.
lib.loc	The library to check.

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